

REMARKS

Claim 6 was objected to as having an informality as set forth in paragraph 2 of the Office Action. Correction of “said light signal applied to said measurement sample is simultaneously applied to said measurement sample” to “said light signal simultaneously applied to said measurement sample” is required.

Applicant respectfully requests clarification of this requirement. The phrase quoted in the Office Action is intended to indicate that where a light signal is applied to a measurement sample, the entire wavelength spectrum of the light signal is applied simultaneously, as opposed to a piecemeal fashion in which discrete portions of the wavelength spectrum are applied to a measurement sample in sequence. Applicant submits that the existing language is clear in this regard and that the required change is not appropriate.

Claim 4 was rejected under 35 U.S.C. 102(b) over Khoe, U.S. 4,942,568, as set forth in paragraph 4 of the Office Action. Applicant respectfully traverses this rejection.

The ‘568 patent discloses a system in which semiconductor lasers output to a selection device 10. Selection device 10 outputs a signal 19 having a wavelength that corresponds to the wavelength of the laser light. A wavelength meter 20 outputs a signal corresponding to the value of the wavelength to a controller 30. If this value indicates a wavelength different from the desired wavelength, controller 30 modifies the current and/or temperature of the lasers to correct their wavelength output.

Even assuming the laser light wavelength in the ‘568 system is a wavelength spectrum, the system of the ‘568 patent does not determine a relationship between the detected intensity of the light signal, on the one hand, and the difference between the light signal’s actual wavelength spectrum and an expected spectrum, on the other. The ‘568 system defines a

relationship only between the light's actual wavelength spectrum and an expected spectrum. That is, to the extent the '568 modifies the wavelength spectrum, it does so based only on a comparison between the actual and desired spectra, not through a relationship between such a comparison and the detected intensity of the light. Thus, the '568 patent neither discloses nor teaches a system that identifies "a relationship between intensity of said light signal and a difference between said wavelength spectrum and an expected wavelength spectrum of said light source." For at least this reason, claim 4 is allowable over the '568 patent.

New claim 7 depends from claim 4 and recites that the light signal is non-monochromatic. For example, in the embodiment described in the application beginning at page 70, line 20, the light from a lamp has a range extending over red and blue wavelength ranges. The light signals modified in the '568 patent are monochromatic, and there is no disclosure or teaching the '568 patent regarding how the systems could compensate for changes in non-monochromatic light.

Claim 6 has been rejected under 35 U.S.C. § 103 over Alguard, U.S. 5,642,189, as set forth in paragraph 6 of the Office Action. Applicant respectfully traverses this rejection.

The '189 patent describes a system in which light having a predetermined spectral distribution is directed to a sheet of paper during a paper processing method. The light partly reflects from, and partly passes through, the paper. The transmitted light is reflected from a tile below the paper having two areas of known reflectivity. The transmitted light reflects from these areas and is combined with the light reflected from the paper. The combined light is directed to a spectrometer. As described beginning at column 9, line 32, the spectral distribution of the light source lamps may change as the source lamps age. To compensate for this change, the paper is removed so that the spectrometers measure only light reflected from

the tile segments. With the sheet removed, a tile with a known amount of fluorescence is measured. If the system detects a fluorescence less than the tile's known fluorescence level, the power input to UV flashlamp 24 is changed to adjust the flashlamp. Alternatively, the system may filter the UV/visible light through a pair of diodes, one filtering for UV and the other filtering for blue. The system then measures the intensity of the UV and blue light, determines the ratio of these intensities, and controls the lamp voltage to maintain the ratio at a desired value.

While the '189 patent recognizes that spectral distributions from the flashlamp will change over time, it does not define a relationship between change in spectral shape over the wavelength range of the light signal applied to the measurement sample to a change in input power to a light source. For example, in the first embodiment, the '189 system relates the light's fluorescence to a change in input power. In the second embodiment, the '189 system determines a ratio of light intensities within the overall wavelength range. In neither embodiment, however, does the '189 system relate change in spectral shape, over the wavelength range of light applied to a measurement sample, to a change in input power. For at least this reason, claim 6 is allowable over the '189 patent.

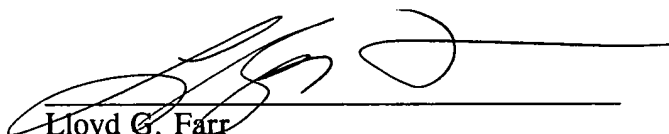
New claim 8 recites that a change in spectral shape is determined through modulation of the light signal by an optical filter configured to weight the intensity of the light signal by wavelength according to a predetermined function that identifies a difference between an expected spectrum of the light source and an actual spectrum of the light source. The '189 patent, which describes use of a spectrometer to determine spectral change in its light source, neither discloses nor teaches the use of an optical filter in determining change of a light source

spectrum with respect to an expected spectrum. For at least this reason, new claim 8 is also allowable over the '189 patent.

Applicant submits that the application is in condition for allowance. Favorable action, and withdrawal of the outstanding rejections, is therefore respectfully requested. The Examiner is requested to contact the undersigned at his convenience should any issues remain.

Respectfully submitted,

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